



INSTITUTO TECNOLÓGICO VALE



Munasinghe Institute for Development
making development more sustainable (MDMS)

Symposium on Sustainable Development: New Dimensions for Society & Business

Espaço Tom Jobim, Jardim Botânico, Rio de Janeiro, 18 June 2012



The Challenges of Unsustainable Development

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Keynote speech given at
The Symposium on Sustainable Development:
New Dimensions for Society and Business
Rio de Janeiro, 18 June 2012



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Sustainable Consumption Institute
University of Manchester

SCI

Growing Risks of Global Breakdown due to Multiple Threats

- Financial-economic crisis: Toxic assets are a multiple of annual global GDP
- Persistent poverty and growing inequity
- Resource shortages: **food**, water, energy
- Environmental harm, extreme events, conflict mass migrations, pandemics
- **Climate change: the ultimate threat amplifier**

Multiple threats are inter-related and synergistic
Stakeholder interests are divergent
Responses uncoordinated – lack of political will



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Ecological Footprint of Human Consumption In 2012 we need 1.5 earths; by 2035 almost 2 Earths

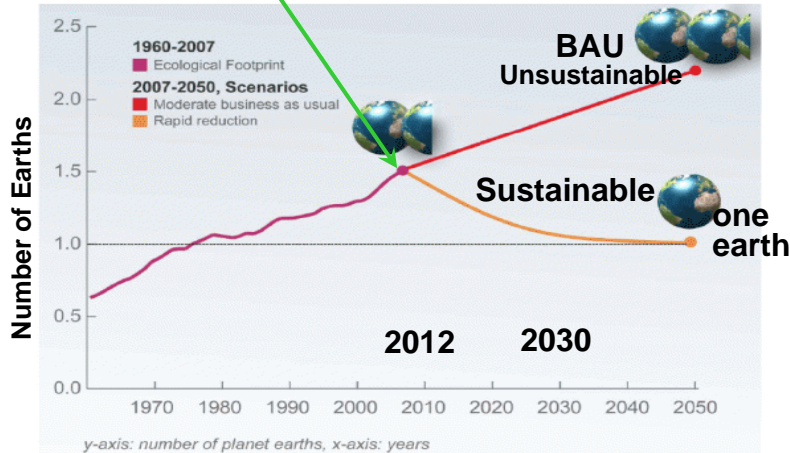
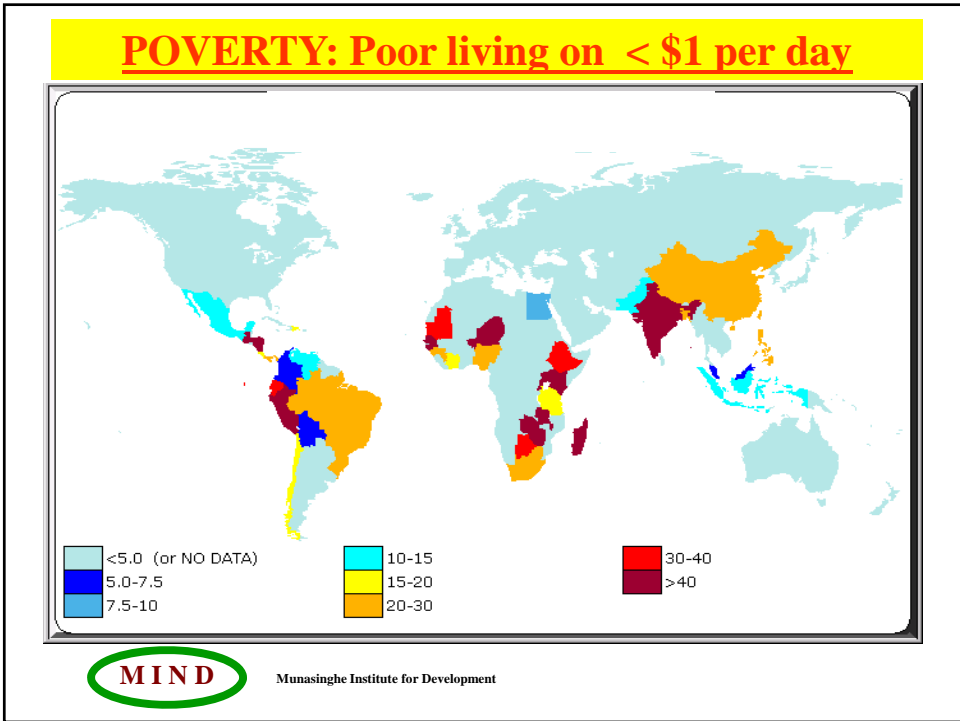
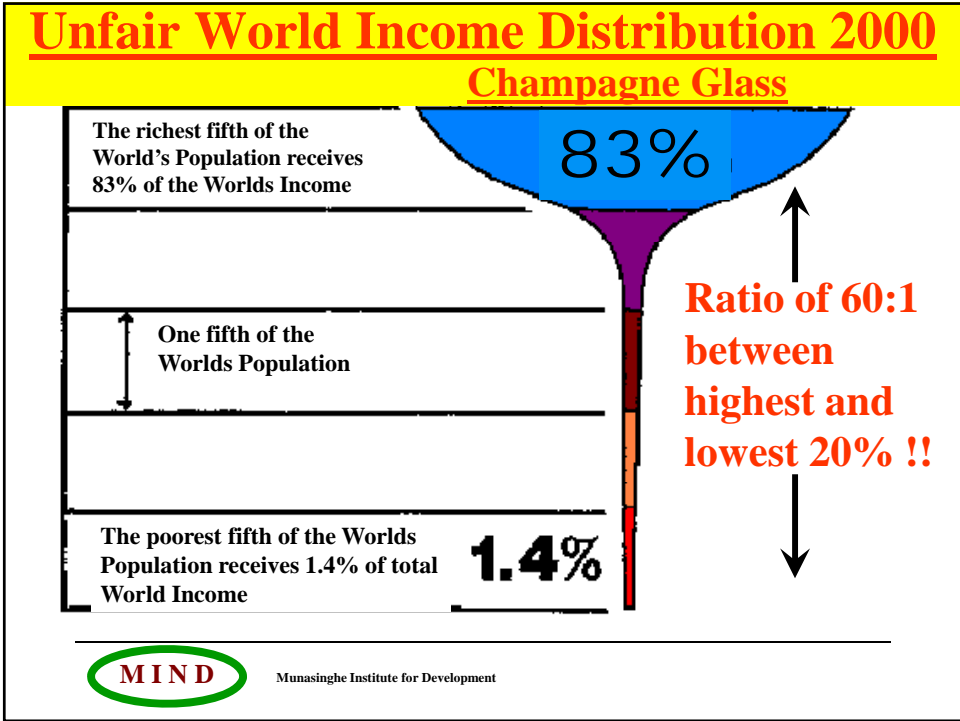


Figure 1: pathways into the future. How long can overshoot be sustained? What's the cost and benefit of each path?





Millennium Development Goals (MDG)

United Nations Millennium Declaration, 2000

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empowerment
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

Commendable targets for 2 billion poor, but where are the resources to meet them, especially with the onset of climate change



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WHAT ARE OUR VALUES
AND HOW WELL DO WE
ESTABLISH PRIORITIES ?

**Dealing with the Triple Crisis
Bubbles**



Financial Markets **Econ. Growth**

Productive Economic Assets

Bio-geo-physical Resources

Sound financial markets and economic growth should be based on the true value of the productive economic asset base. In turn the value and use of economic assets should closely reflect the state of natural (bio-geo-physical) resources

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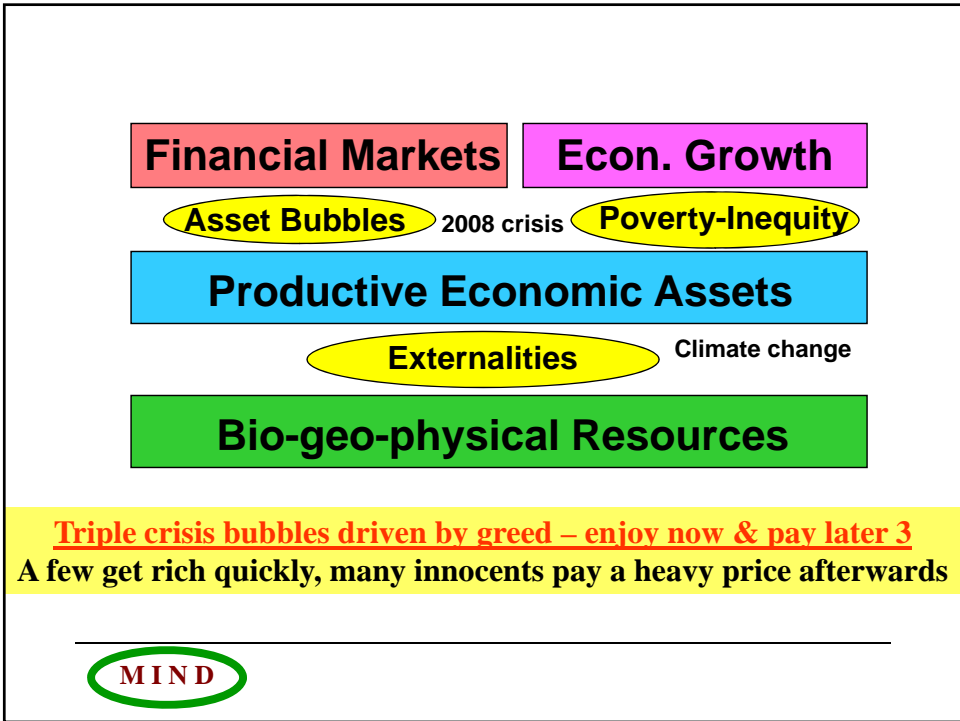
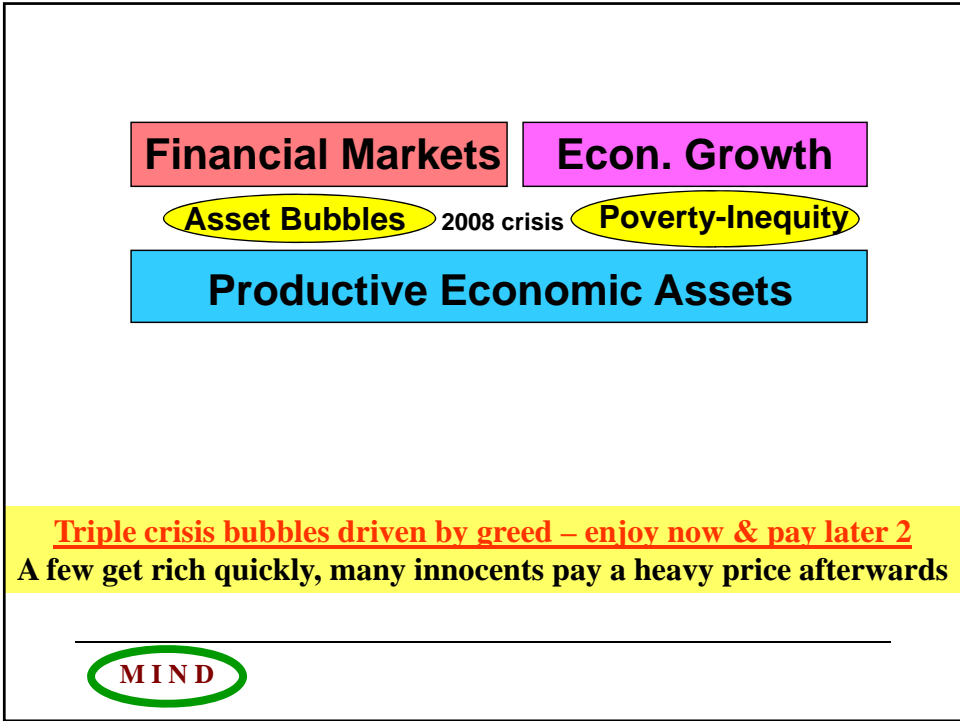
Financial Markets

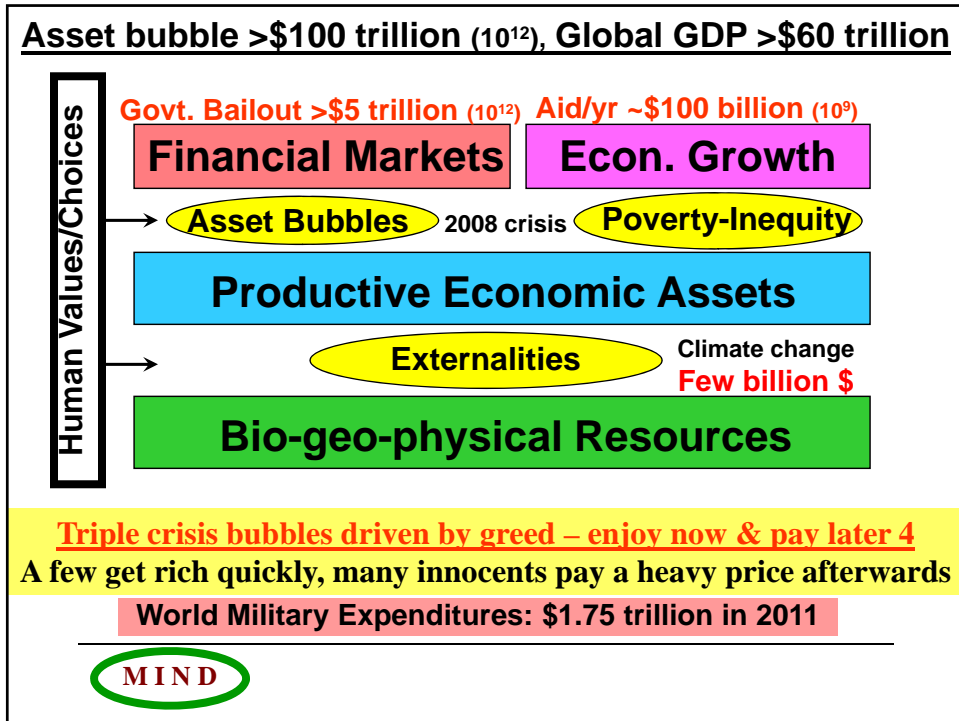
Asset Bubbles 2008 crisis

Productive Economic Assets

Triple crisis bubbles driven by greed – enjoy now & pay later 1
A few get rich quickly, many innocents pay a heavy price afterwards

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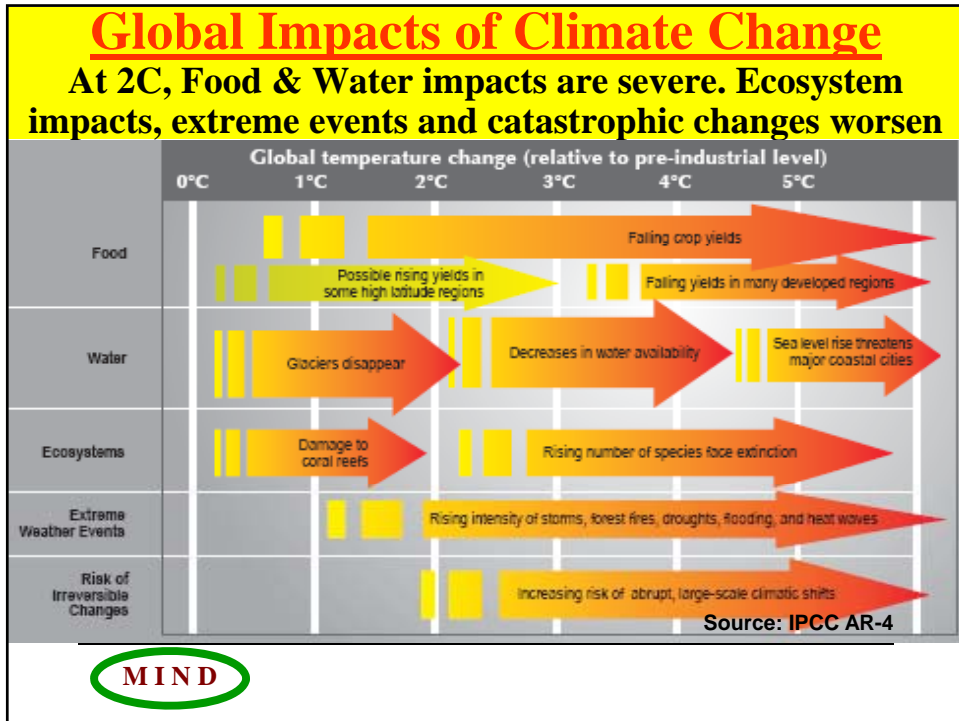




Climate Change – IPCC AR4 Main Findings

- Global warming is unequivocal. Total radiative forcing of the climate now is unprecedented in several thousand years, due to rising concentrations of GHG (CO₂, CH₄ & NO₂).
- Humans activities since the 18th century are very likely to have caused net warming of Earth's climate, dominating over the last 50 years. More temp. and sea level rise is inevitable, even with existing GHG concentrations.
- Long term unmitigated climate change would likely exceed the capacity to adapt, of natural managed and human systems.
- Adaptation measures are available, but must be systematically developed
- Mitigation technologies are also available, but better policies and measures (PAM) are needed to realize their potential.
- Poor countries & poor groups are most vulnerable to warming, sea level rise, precipitation changes and extreme events. Most socio-economic sectors, ecological systems and human health will suffer.
- Making development more sustainable (MDMS) is the most effective solution - by integrating climate change policy into sustainable development strategy.

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MOST DESIRABLE:

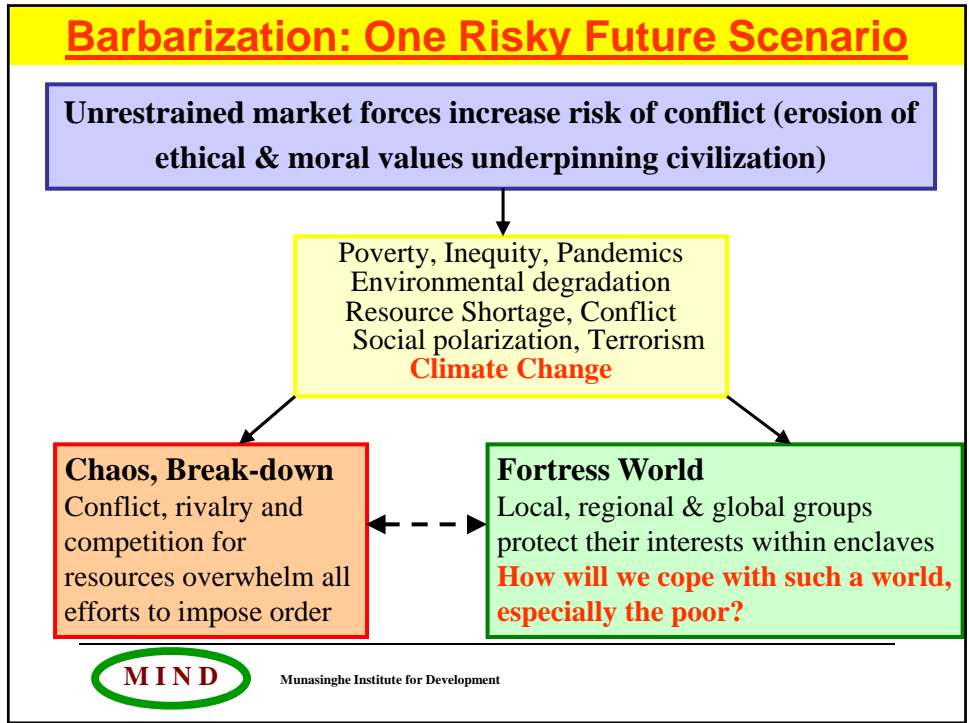
**CC Policies that Harmonise both
Adaptation and Mitigation (Win-Win)
while also Making Development More
Sustainable (MDMS)**

Examples: growing forests, energy saving

Many trade-offs also arise and need to be reconciled

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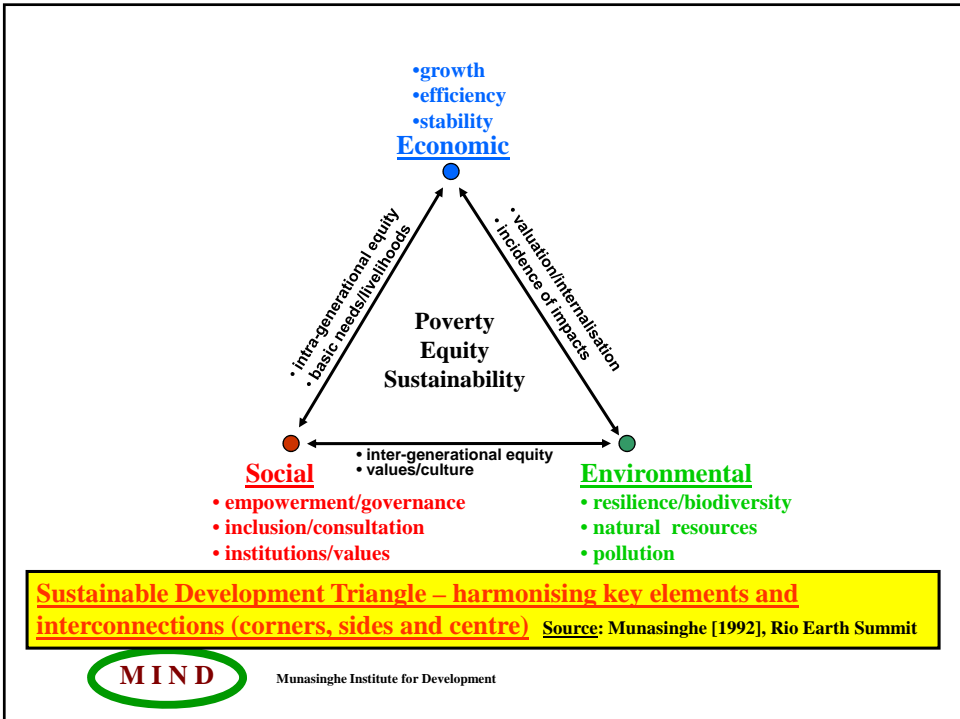
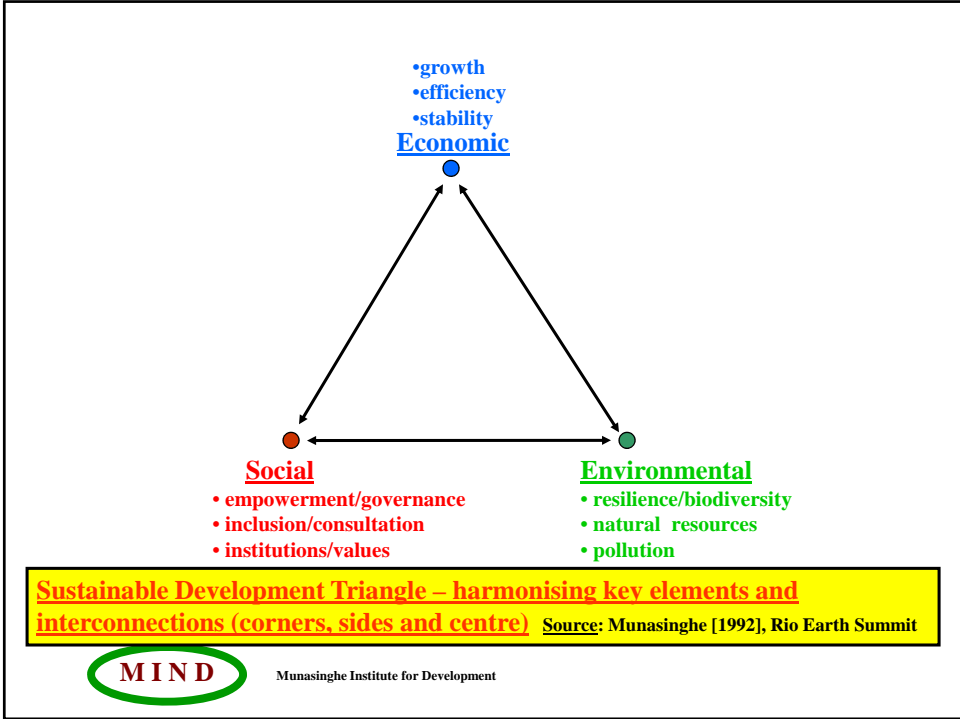


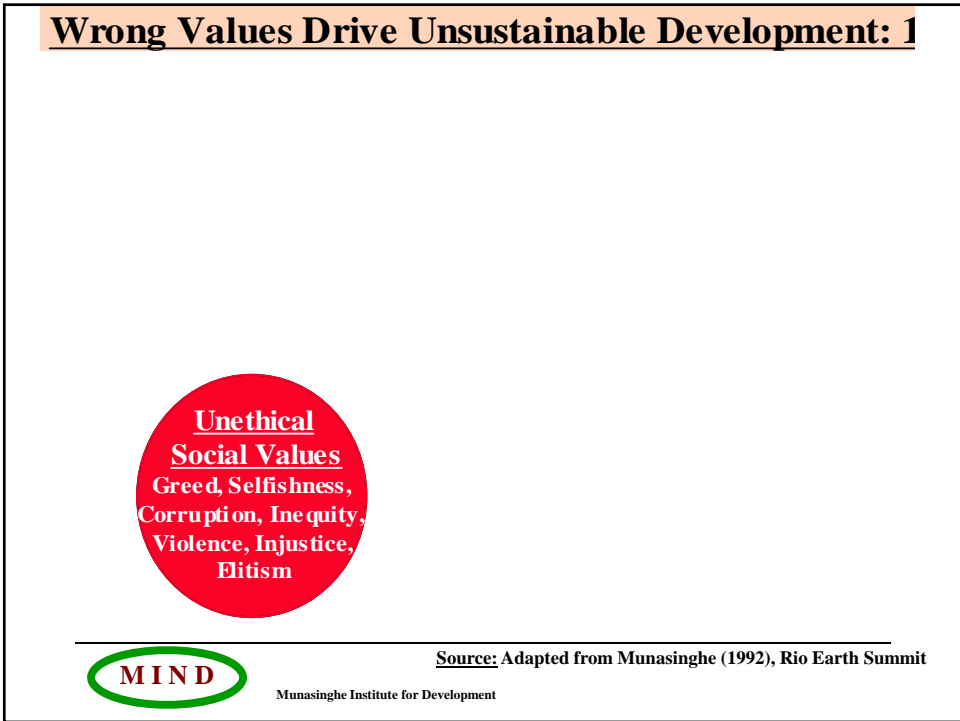
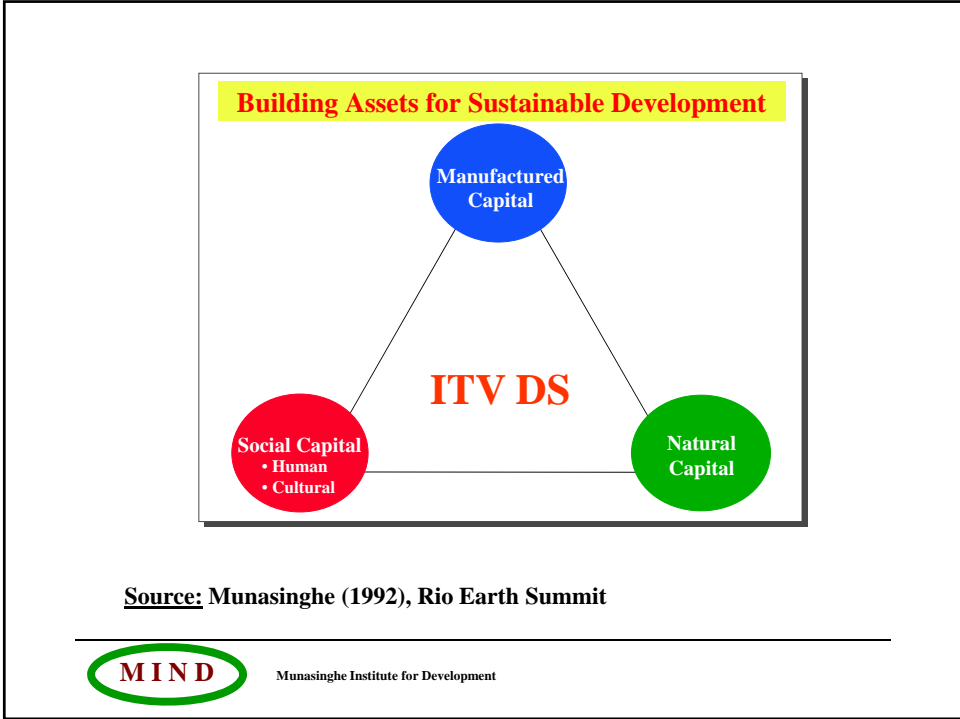
SUSTAINOMICS

Core concepts and elements

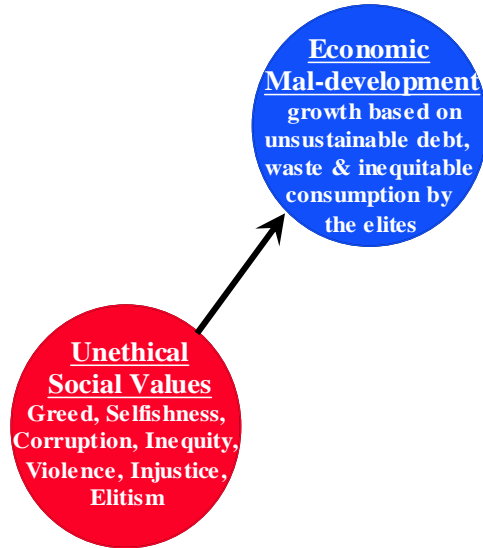
- 1. Making development more sustainable (MDMS)**
EMPOWERMENT, ACTION & FORESIGHT
- 2. Harmonising the sustainable development triangle**
BALANCE, INTEGRATION

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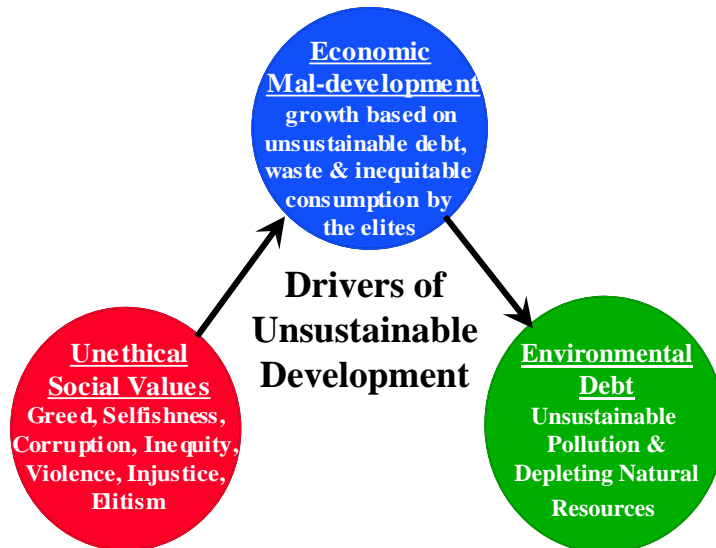
Wrong Values Drive Unsustainable Development: 2



Source: Adapted from Munasinghe (1992), Rio Earth Summit

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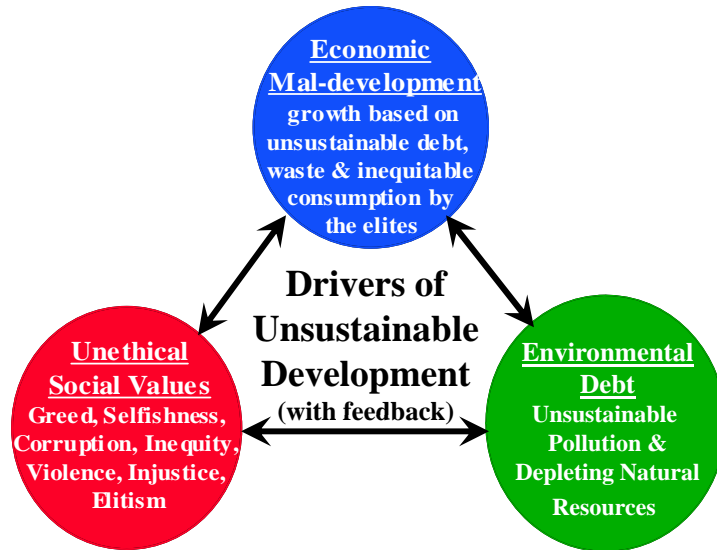
Wrong Values Drive Unsustainable Development: 3



Source: Adapted from Munasinghe (1992), Rio Earth Summit

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Wrong Values Drive Unsustainable Development: 4



Source: Adapted from Munasinghe (1992), Rio Earth Summit

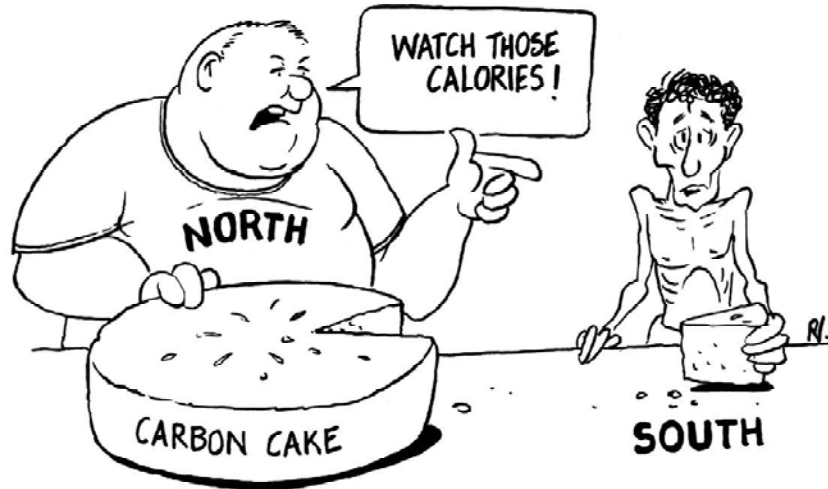
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**Making Development More Sustainable via “Tunneling”:
Potential Post-Kyoto Framework for Jointly Managing Climate Risk & Right to Develop**



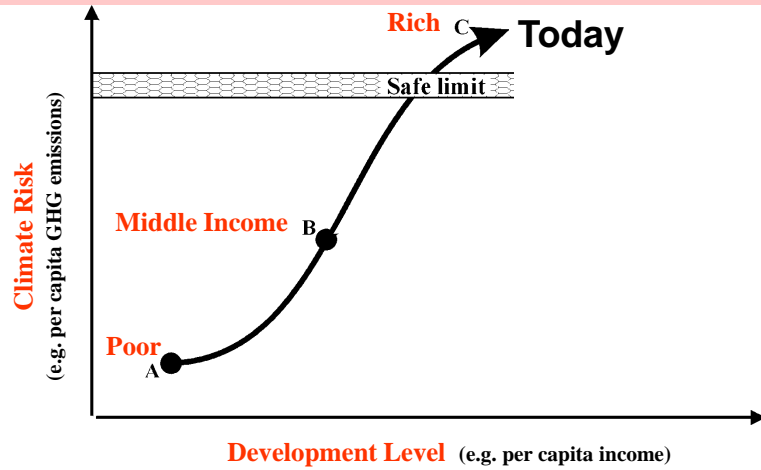
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Climate Justice – Equitable Allocation of Per Capita Carbon Emissions



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MDMS via “Tunneling” & global cooperation to manage Climate Risk & Right to Develop - 1

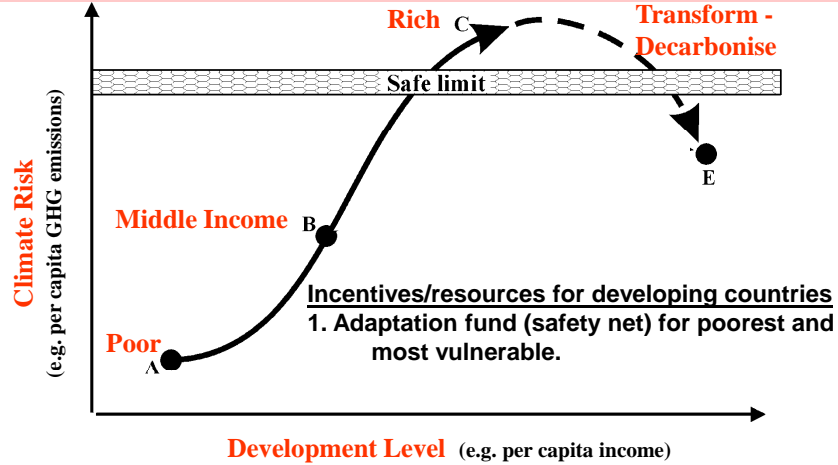


Source: M. Munasinghe (1995) "Making Growth More Sustainable," *Ecological Economics*, 15:121-4.

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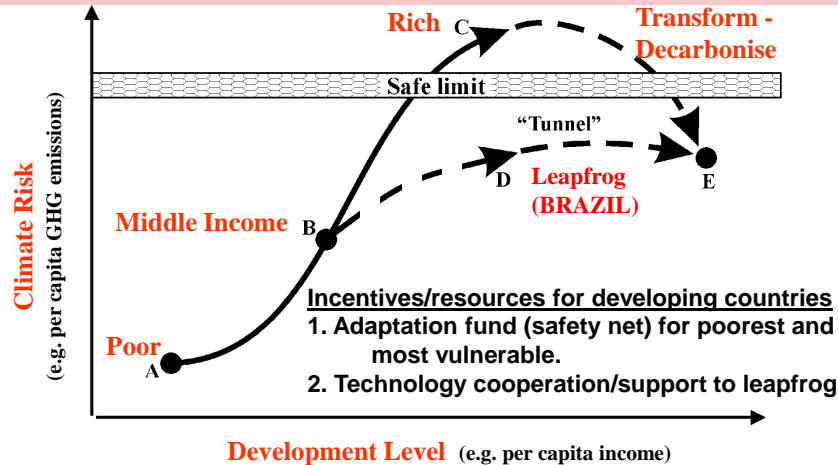
MDMS via "Tunneling": global cooperation to manage Climate Risk & Right to Develop - Step 2



Source: M. Munasinghe (1995) "Making Growth More Sustainable," *Ecological Economics*, 15:121-4.



MDMS via "Tunneling": global cooperation to manage Climate Risk & Right to Develop - Step 3



Source: M. Munasinghe (1995) "Making Growth More Sustainable," *Ecological Economics*, 15:121-4.



**Food for a Week:
Poor Family**
 Unsustainable/Unethical – must leapfrog/tunnel to prosperity: **Millennium Development Goals: MDG**





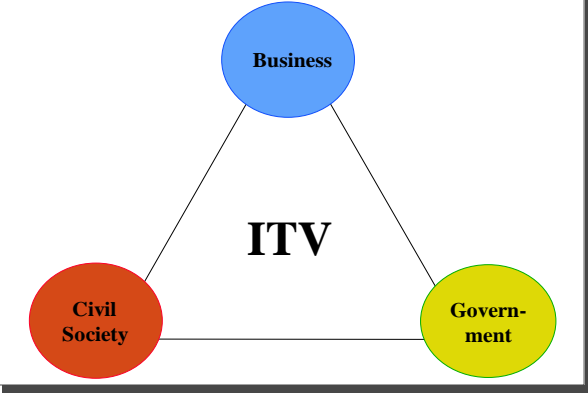
**Food for a Week:
Affluent Family**
 Unsustainable – must transform/decarbonize towards sustainability: **Millennium Consumption Goals: MCG**



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Source: Menzel, 2005

Transcending Stakeholder Boundaries to Ensure Cooperation for Sustainable Development



ITV can catalyse interactions among **government, civil society and business** to strengthen local, national and global governance

Source: Munasinghe (1992), Rio Earth Summit



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Business Community - Evolution of Attitudes

“Few trends could so thoroughly undermine the very foundations of our free society than the acceptance by corporate officials of a social responsibility other than to **make as much money as possible for stockholders.**”

Milton Friedman (1962), Capitalism and History

”The crisis has led many in the UK, France and the USA to demand the right of inventory. Should the only questions that Managers be asking be: how to maximize shareholder’s value? Or, what is the importance of values? What are our values?

Stephen Green (2009), CEO of HSBC, "Good Value: Reflections on Money, Morality and an Uncertain World"

“Over the past decade, **sustainability has moved from the fringes of the business world to the top of the shareholders' agenda....**”

PriceWaterHouseCooper (2009)



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Example of Corporate social and Environmental Goals - Vale

	Environment Goals	Social Goals
	Waste Management - Ranges from separation of different materials to the pursuit of alternative reprocessing techniques to enable waste to be reused in other supply chains	Management programs to leverage the positive results of its presence in each region- Vocational Training, Community relations, Cultural projects and strengthening relationships with indigenous communities
	Water Management - environmental information system to organize and store data on water resource management	Protect human rights – along supply chains; of employees; of locals ; of societies
	Energy Management – Both at power generation and management	
	C- program – programs for reducing c- emission and increasing c- sequestration; use of new technologies; use of renewable energy	
	Biodiversity - improving and developing technologies and procedures to restore degraded areas and preserve biodiversity	



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**Thank You
Very Much**

**Muito
Obrigado**



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